

WHAT IS CLAIMED IS:

1. ~~An apparatus for influencing the travel properties of a material~~
moving between a material supply source and a delivery location, the apparatus
comprising:

5 means forming a feed path along which material travels as the
material is enroute from the material supply source to the delivery
location, the feed path passing through an upstream passage bounded by an
upstream passage periphery ^{L.A.} each point of which is at a predetermined
radial spacing from a reference axis and the feed path including one branch
10 having a branch entry downstream of the upstream passage and another
branch having a branch entry downstream of the upstream passage, the
stream of material traveling through the upstream passage thereafter
separating into at least two portions with one portion of the material
entering the one branch through its branch entry and thereafter traveling
15 along the one branch and another portion of the material entering the
another branch through its branch entry and thereafter traveling along the
another branch in a manner in which the another portion of the material
and the one portion of the material are segregated from one another during
their respective travel along the one branch and the another branch; and
20 means for moving at least one of the upstream passage periphery
and the one branch entry relative to the reference axis such that the one
portion of the material and the another portion of the material, prior to
their respective segregated travel along the one branch and the another
branch, are comprised in unseparated manner in the stream of material as it
25 travels through the upstream passage and the portions of the material
thereafter travel in segregated manner in their respective branches with the
travel properties of the one portion of the material in the one branch being
different than its travel properties before the movement of the at least one

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of the upstream passage periphery and the one branch entry relative to the reference axis.

2. An apparatus for influencing the travel properties of a material according to claim 1 wherein a superimposition of the upstream passage periphery on the one branch entry effected by axially translating the upstream passage periphery along the reference axis onto the one branch entry delimits a predetermined cross sectional superimposed area of the one branch entry and the means for moving at least one of the upstream passage periphery and the one branch entry relative to the reference axis includes means for changing the radial position of the upstream passage periphery relative to the reference axis to effect a change in the superimposed cross sectional area of the one branch entry delimited by the superimposition of the upstream passage periphery on the one branch entry, the means for changing the radial position of the upstream passage periphery being operable to change the radial position of the upstream passage periphery from an initial upstream position during an initial material feed period to a subsequent upstream position during a subsequent material feed period following the initial material feed period, whereby the superimposition of the upstream passage periphery on the one branch entry delimits, during the initial material feed period, an initial superimposed cross sectional area of the one branch entry and delimits, during the subsequent material feed period, a subsequent superimposed cross sectional area of the one branch entry which differs from the initial cross sectional area.

3. An apparatus for influencing the travel properties of a material according to claim 1 wherein the subsequent superimposed cross sectional area of the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is smaller than the initial superimposed cross sectional area of the one branch entry.

4. An apparatus for influencing the travel properties of a material according to claim 1 wherein the subsequent superimposed cross sectional area of

the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is larger than the initial superimposed cross sectional area of the one branch entry.

5. An apparatus for influencing the travel properties of a material
5 according to claim 1 wherein the subsequent superimposed cross sectional area of the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is at a different radial position than the initial superimposed cross sectional area of the one branch entry.

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6. An apparatus for influencing the travel properties of a material according to claim 1 wherein the means for relatively moving includes means for axially moving the upstream passage periphery relatively toward and away from the two branch entries.

15 7. An apparatus for influencing the travel properties of a material according to claim 5 and further comprising means for sensing a predetermined mass flow rate in the one branch and means operatively coupled to the predetermined mass flow rate sensing means and means for axially moving the upstream passage periphery for controlling the axial movement of the upstream passage periphery in response to the sensing of the predetermined mass flow rate by the predetermined mass flow rate sensing means.

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